1. A substrate system, comprising:

photo-polymerizable monomers; and

bioactive molecules admixed with the monomers, the bioactive molecules shielded from the monomers by an insoluble material that undergoes a solid-gel transition at body temperature, wherein, upon polymerization, the monomers produce a cross-linked structure and the shielded bioactive molecules are protected from attack in the polymerized environment.

2. The system of claim 1, wherein the substrate is used for drug delivery.

3. The system of claim 1, wherein the substrate is used for tissue engineering.

4. The system of claim 1, wherein the substrate is used for diagnostic purposes.

5. The system of claim 1, wherein the substrate is used for detoxification or substance removal.

6. The system of claim 1, wherein the insoluble material is gelatin.

7. The system of claim 1, wherein the insoluble material is collagen.

8. The system of claim 1, wherein the insoluble material is natural polymer.

9. The system of claim 1, wherein the insoluble material is synthetic polymer.

10. The system of claim 1, wherein the bioactive material is a drug.

11. The system of claim 1, wherein the bioactive material is an enzyme.

12. The system of claim 1, wherein the bioactive material is a protein.

13. The system of claim 1, wherein the bioactive material is a growth factor.

14. The system of claim 10, wherein the drug is a calcifying agent, antibiotic, anticancer agent, anti-inflammatory agent, cytokine, matrix metalloproteinase, cell mediator, inhibitor, antimitotic agent, alkylating agent, immunomodulator, anti-hypertensive, analgesic, antifungal, antibody, vaccine, hormone, cardiovascular agent, respiratory agent, sympathomimetic agent, cholinomimetic agent, adrenergic, adrenergic neuron blocking agent, antimuscarinic agent, antispaspodic agent, skeletal muscle relaxant, diuretic, uterine agent, antimigrane agent, local anesthetic, antiepileptic, psicopharmacological agent, histamine, antihistamine, central nervous system stimulant, antineoplastic agent, immunosuppressive agent, vitamin, nutrient, antimicrobial agent not comprised in antibiotics, antiviral agent, parasiticide, diagnostic agent or a combination or derivative thereof.

15. The system of claim 10, wherein the drug is bulked up by one or a mixture of compatible substrates.

16. The system of claim 15, wherein the compatible substrate is a sugar, polysaccharide, glycolipid, glycosaminoglycan, lipid, amino acid, peptide, polypeptide, protein, amine, lipo-proteic molecule, polyol, gum, wax, antioxidant, anti-reductant, buffering agent, inorganic salt, organic salt, radical scavenger, diluent, cryoprotectant, natural polymer, synthetic polymer or a combination or derivative thereof.

17. The system of claim 15, wherein the compatible substrate is a glycine, sodium glutamate, proline, α-alanine, β-alanine, lysine-HCL, 4 hydroxyproline or a combination or derivative thereof.

18. The system of claim 15, wherein the compatible substrate is a betaine, trimethylamine N-oxide or a combination or derivative thereof.

19. The system of claim 15, wherein the compatible substrate is ammonium, sodium, magnesium sulfate, potassium phosphate, sodium flouride, sodium acetate, sodium polyethylene, sodium caprylate, propionate, lactate, succinate, or combinations or derivatives thereof.

20. The system of claim 15, wherein the compatible substrate is mannitol, lactose, sorbitol, sucrose, inositol, dicalcium phosphate, calcium sulfate, cellulose, hydroxypropylmethylcellulose, kaolin, sodium chloride, starch or combinations or derivatives thereof.

21. The system of claim 1, further including a binder.

22. The system of claim 21, wherein the binder is a starch, gelatin, sugar, natural gum, synthetic gum, polyethylene glycol, ethylcellulose, wax, water, achools, amylase, methacrylate, methyl methacrylate copolymer or a combination or derivative thereof.

23. The system of claim 21, wherein the binder is sucrose, glucose, dextrose, molasses, lactose or combinations or derivatives thereof.

24. The system of claim 21, wherein the binder is acacia, sodium alginate, extract of Irish moss, panwar gum, ghatti gum, mucilage of isapol husks, carboxymethylcellulose, methylcellulose, hydroxypropyl methylcellulose, hydroxypropyl cellulose, ethyl cellulose, polyvinylpyrrolidone, Veegum, larch arabogalactan, or combinations or derivatives thereof.

25. The system of claim 1, further including a plastificizer.

26. The system of claim 25, wherein the plastificizer is a glycerin, propylene glycol, polyethylene glycol, triacetin, acetylated monoglyceride, citrate ester, phthalate ester or a combination or derivative thereof.

27. The system of claim 1, further including a disaggregant.

28. The system of claim 27, wherein the disaggregant is a starch, clay, cellulose, algin, gum, cross-linked natural polymer, cross-linked synthetic polymer, Veegum HV, methylcellulose, agar, bentonite, cellulose, wood product, natural sponge, cation-exchange resin, alginic acid, guar gum, citrus pulp, carboxymethylcellulose, sodium lauryl sulfate or combinations or derivatives thereof.

29. The system of claim 1, wherein the bioactive molecules are shielded by the insoluble material by granulation, spray drying, spray chilling, lyophilization, coating vapor deposition, compression, microencapsulation, coating, subcoating, sealing, coacervation, suspension, precipitation, cogelation, gelation, inclusion in pre-formed delivering systems, inclusion in matrix, inclusion in micromatrix, evaporation or combinations thereof.

30. The system of claim 1, further comprising a photopolymerization means for polymerizing the monomers to produce a cross-linked structure including the bioactive molecules.

31. The system of claim 30, wherein the photopolymerization means is UV radiation, blue-light radiation, visible radiation, radiation produced by light emitting diodes technology or combinations thereof.

32. A substrate system, comprising:

photo-polymerizable monomers; and

bioactive molecules previously included in a drug delivery system, the drug-loaded delivery system shielded from the monomers by an insoluble material that undergoes a solid-gel transition at body temperature, wherein, upon polymerization, the monomers produce a cross-linked structure and the shielded bioactive molecules are protected from attack in the polymerized environment.

33. The system of claim 32, wherein the insoluble material is gelatin.

34. The system of claim 32, wherein the insoluble material is collagen.

35. The system of claim 32, wherein the insoluble material is natural polymer.

36. The system of claim 32, wherein the insoluble material is synthetic polymer.

37. The system of claim 32, wherein the bioactive material is a drug.

38. The system of claim 32, wherein the bioactive material is an enzyme.

39. The system of claim 32, wherein the bioactive material is a protein.

40. The system of claim 32, wherein the bioactive material is a growth factor.

41. The system of claim 37, wherein the drug is a calcifying agent, antibiotic, anticancer agent, anti-inflammatory agent, cytokine, matrix metalloproteinase, cell mediator, inhibitor, antimitotic agent, alkylating agent, immunomodulator, anti-hypertensive, analgesic, antifungal, antibody, vaccine, hormone, cardiovascular agent, respiratory agent, sympathomimetic agent, cholinomimetic agent, adrenergic, adrenergic neuron blocking agent, antimuscarinic agent, antispaspodic agent, skeletal muscle relaxant, diuretic, uterine agent, antimigrane agent, local anesthetic, antiepileptic, psicopharmacological agent, histamine, antihistamine, central nervous system stimulant, antineoplastic agent, immunosuppressive agent, vitamin, nutrient, antimicrobial agent not comprised in antibiotics, antiviral agent, parasiticide, diagnostic agent or a combination or derivative thereof.

42. The system of claim 37, wherein the drug is bulked up by one or a mixture of compatible substrates.

43. The system of claim 42, wherein the compatible substrate is a sugar, polysaccharide, glycolipid, glycosaminoglycan, lipid, amino acid, peptide, polypeptide, protein, amine, lipo-proteic molecule, polyol, gum, wax, antioxidant, anti-reductant, buffering agent, inorganic salt, organic salt, radical scavenger, diluent, cryoprotectant, natural polymer, synthetic polymer or a combination or derivative thereof.

44. The system of claim 42, wherein the compatible substrate is a glycine, sodium glutamate, proline, α-alanine, β-alanine, lysine-HCL, 4 hydroxyproline or a combination or derivative thereof.

45. The system of claim 42, wherein the compatible substrate is a betaine, trimethylamine N-oxide or a combination or derivative thereof.

46. The system of claim 42, wherein the compatible substrate is ammonium, sodium, magnesium sulfate, potassium phosphate, sodium flouride, sodium acetate, sodium polyethylene, sodium caprylate, propionate, lactate, succinate, or combinations or derivatives thereof.

47. The system of claim 42, wherein the compatible substrate is mannitol, lactose, sorbitol, sucrose, inositol, dicalcium phosphate, calcium sulfate, cellulose, hydroxypropylmethylcellulose, kaolin, sodium chloride, starch or combinations or derivatives thereof.

48. The system of claim 32, further including a binder.

49. The system of claim 48, wherein the binder is a starch, gelatin, sugar, natural gum, synthetic gum, polyethylene glycol, ethylcellulose, wax, water, achools, amylase, methacrylate, methyl methacrylate copolymer or a combination or derivative thereof.

50. The system of claim 48, wherein the binder is sucrose, glucose, dextrose, molasses, lactose or combinations or derivatives thereof.

51. The system of claim 48, wherein the binder is acacia, sodium alginate, extract of Irish moss, panwar gum, ghatti gum, mucilage of isapol husks, carboxymethylcellulose, methylcellulose, hydroxypropyl methylcellulose, hydroxypropyl cellulose, ethyl cellulose, polyvinylpyrrolidone, Veegum, larch arabogalactan, or combinations or derivatives thereof.

52. The system of claim 32, further including a plastificizer.

53. The system of claim 52, wherein the plastificizer is a glycerin, propylene glycol, polyethylene glycol, triacetin, acetylated monoglyceride, citrate ester, phthalate ester or a combination or derivative thereof.

54. The system of claim 32, further including a disaggregant.

55. The system of claim 54, wherein the disaggregant is a starch, clay, cellulose, algin, gum, cross-linked natural polymer, cross-linked synthetic polymer, Veegum HV, methylcellulose, agar, bentonite, cellulose, wood product, natural sponge, cation-exchange resin, alginic acid, guar gum, citrus pulp, carboxymethylcellulose, sodium lauryl sulfate or combinations or derivatives thereof.

56. The system of claim 32, wherein the bioactive molecules are shielded by the insoluble material by granulation, spray drying, spray chilling, lyophilization, coating vapor deposition (CVD), compression, microencapsulation, coating, subcoating, sealing, coacervation, suspension, precipitation, cogelation, gelation, inclusion in pre-formed delivering systems, inclusion in matrix and micromatrix, evaporation or combinations thereof.

57. The substrate system of claim 32, wherein the drug delivery system is capsules, tablets, powders, granules, pills, pellets, reservoir devices, matrix devices, microparticles or microspheres, nanoparticles or nanospheres, micro- and nano-capsules, liposomes, lyophilized systems, osmotic systems, emulsions, microemulsions, gels, gelified systems,

implants, implantable mems, implantable micro- and nano- diagnostic devices, solid lipid nanoparticles, chip, microchips, microarrays, environmental sensitive systems, immune system sensitive systems, dissolution-controlled systems, swellable systems, osmotic pumps and micro-pumps, magnetic systems, ciclodextrins, human or animal and normal or stem or immortalized or engineered cells.

58. The system of claim 32, further comprising a photopolymerization means for polymerizing the monomers to produce a cross-linked structure including the drug molecules.

59. The system of claim 58, wherein the photopolymerization means is UV radiation, blue-light radiation, visible radiation, radiation produced by light emitting diodes technology or combinations thereof.

60. A drug delivery system, comprising:

photo-polymerizable monomers;

drug molecules admixed with the monomers, the drug molecules shielded from the monomers by an insoluble material that undergoes a solid-gel transition at body temperature; and

a photopolymerization means for polymerizing the monomers to produce a cross-linked structure including the drug molecules.

61. The system of claim 60, wherein the photopolymerization means is UV radiation, blue-light radiation, visible radiation, radiation produced by light emitting diodes technology or combinations thereof.

62. The system of claim 60, wherein the insoluble material is gelatin.

63. The system of claim 60, wherein the insoluble material is collagen.

64. The system of claim 60, wherein the insoluble material is natural polymer.

65. The system of claim 60, wherein the insoluble material is synthetic polymer.

66. The system of claim 60, wherein the drug molecules are calcifying agents, antibiotics, anticancer agents, anti-inflammatory agents, cytokines, matrix metalloproteinases, cell mediators, inhibitors, antimitotic agents, alkylating agents, immunomodulators, anti-hypertensives, analgesics, antifungals, antibodies, vaccines, hormones, cardiovascular agents, respiratory agents, sympathomimetic agents, cholinomimetic agents, adrenergics, adrenergic neuron blocking agents, antimuscarinic agents, antispaspodic agents, skeletal muscle relaxants, diuretics, uterine agents, antimigrane agents, local anesthetics, antiepileptics, psicopharmacological agents, histamines, antihistamines, central nervous system stimulants, antineoplastic agents, immunosuppressive agents, vitamins, nutrients, antimicrobial agents not comprised in antibiotics, antiviral agents, parasiticides, diagnostic agents or combinations or derivatives thereof.

67. The system of claim 60, wherein the drug is bulked up by one or a mixture of compatible substrates.

68. The system of claim 67, wherein the compatible substrate is a sugar, polysaccharide, glycolipid, glycosaminoglycan, lipid, amino acid, peptide, polypeptide, protein, amine, lipo-proteic molecule, polyol, gum, wax, antioxidant, anti-reductant, buffering agent, inorganic salt, organic salt, radical scavenger, diluent, cryoprotectant, natural polymer, synthetic polymer or a combination or derivative thereof.

69. The system of claim 67, wherein the compatible substrate is a glycine, sodium glutamate, proline, α-alanine, β-alanine, lysine-HCL, 4 hydroxyproline or a combination or derivative thereof.

70. The system of claim 67, wherein the compatible substrate is a betaine, trimethylamine N-oxide or a combination or derivative thereof.

71. The system of claim 67, wherein the compatible substrate is ammonium, sodium, magnesium sulfate, potassium phosphate, sodium flouride, sodium acetate, sodium polyethylene, sodium caprylate, propionate, lactate, succinate, or combinations or derivatives thereof.

72. The system of claim 67, wherein the compatible substrate is mannitol, lactose, sorbitol, sucrose, inositol, dicalcium phosphate, calcium sulfate, cellulose, hydroxypropylmethylcellulose, kaolin, sodium chloride, starch or combinations or derivatives thereof.

73. The system of claim 60, further including a binder.

74. The system of claim 73, wherein the binder is a starch, gelatin, sugar, natural gum, synthetic gum, polyethylene glycol, ethylcellulose, wax, water, achools, amylase, methacrylate, methyl methacrylate copolymer or a combination or derivative thereof.

75. The system of claim 73, wherein the binder is sucrose, glucose, dextrose, molasses, lactose or combinations or derivatives thereof.

76. The system of claim 73, wherein the binder is acacia, sodium alginate, extract of Irish moss, panwar gum, ghatti gum, mucilage of isapol husks, carboxymethylcellulose, methylcellulose, hydroxypropyl methylcellulose, hydroxypropyl cellulose, ethyl cellulose, polyvinylpyrrolidone, Veegum, larch arabogalactan, or combinations or derivatives thereof.

77. The system of claim 60, further including a plastificizer.

78. The system of claim 77, wherein the plastificizer is a glycerin, propylene glycol, polyethylene glycol, triacetin, acetylated monoglyceride, citrate ester, phthalate ester or a combination or derivative thereof.

79. The system of claim 60, further including a disaggregant.

80. The system of claim 79, wherein the disaggregant is a starch, clay, cellulose, algin, gum, cross-linked natural polymer, cross-linked synthetic polymer, Veegum HV, methylcellulose, agar, bentonite, cellulose, wood product, natural sponge, cation-exchange resin, alginic acid, guar gum, citrus pulp, carboxymethylcellulose, sodium lauryl sulfate or combinations or derivatives thereof.

81. The system of claim 60, wherein the drug molecules are shielded by the insoluble material by granulation, spray drying, spray chilling, lyophilization, coating vapor deposition, compression, microencapsulation, coating, subcoating, sealing, coacervation, suspension, precipitation, cogelation, gelation, inclusion in pre-formed delivering systems, inclusion in matrix, inclusion in micromatrix, evaporation or combinations thereof.